8-Port Gigabit Easy Smart Switch

User Manual

FCC Certifications

This Equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received; including interference that may cause undesired operation.

CE Mark Warning

This equipment complies with the requirements relating to the EMC Directive 2004/108/EC, the Low Voltage Directive 2006/95/EC, and the RoHS Directive 2011/65/EU.

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Chapter 1 Introduction

1.1 General Description

The device is high-performance Gigabit Ethernet switch, with all 8 ports capable of 10/100/1000Mbps auto-negotiation operation (NWay) which means the switch could automatically negotiate with the connected partners on the network speed and duplex mode.

This switch supports the Web GUI to control each port status and bandwidth control by port rate limiting. It's easy to set the VLAN & QoS function, the VLAN includes MTU VLAN, Port Base VLAN & 802.1Q VLAN. The QoS has 4 priority queues QoS which can set the Storm Filter for Broadcast Storm, Multicast Storm & Unicast Storm. Loop detection and prevention functions are supported for detecting/resolving the cable loopback connection issue more easily. Support DHCP snooping function to prevent untrusted DHCP server installed for easily maintaining network management.

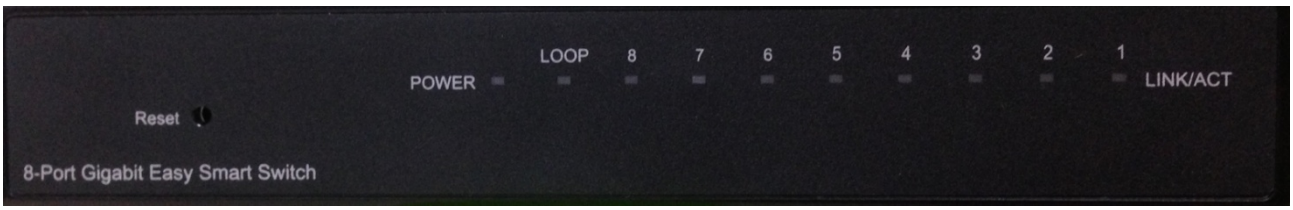
The switch complies with IEEE802.3az Energy Efficient Ethernet to save power consumption, Supports IGMP Snooping function to improve traffic performance. Moreover, the rich diagnostic LEDs on the front-panel provide the operating status of individual port and whole system.

1.2 Key Features

- 8 * RJ-45 ports for 10/100/1000Mbps connectivity
- Supports MDI/MDI-X auto crossover
- Supports NWay protocol for speed (10/100/1000Mbps) and duplex mode (Half/Full) auto-detection
- Complies with IEEE802.3, 802.3u, 802.3ab Ethernet standards
- Complies with IEEE802.3az Energy Efficient Ethernet
- Supports IEEE802.3x Flow Control
- Supports Storm Filter (Broadcast, Multicast, Unicast)
- The QoS Supports 802.1p QoS and port rate limiting
- The VLAN includes MTU, Port Based & 802.1Q Tag Based
- Supports 4 groups of Port Based VLAN
- Provides Port trunk by one group two ports
- Provides Port Mirroring by one group two ports
- Supports IGMP Snooping v1/v2/v3
- Supports Loop detection and Loop prevention
- Supports EEE enable and disable
- Provides Cable testing function
- Supports DHCP Client
- Supports DHCP snooping
- Supports Firmware upgrade
- Supports Configuration backup & restore
- Full Range of Internal universal switching power supply
- Supports Reset to factory default button

1.3 The Front Panel

The following figure shows the front panel of the switch.



LEDs Definition

This device provides extensive LEDs to show the activities on power, system and ports.
See the following description for your reference:

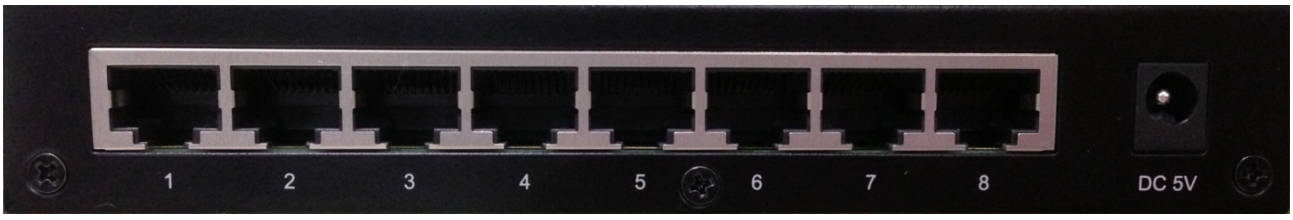
LED	Status	Operation
POWER	Steady Green	The switch is powered on.
	Off	The switch is powered off.
LOOP	Steady Red	The switch is detected the network loopback.
	Off	The Loop is not detected.
Link/ACT	Steady Green	Valid port connection;.
	Blinking Green	Valid port connection and there is data transmitting/receiving
	Off	Port disconnected.

The Reset Button

Reset the switch to its factory default configuration via the RESET button. Press the RESET button for more than two seconds to enable reset to default function. The switch automatically reboots and reloads its factory configuration file. The RESET button is on the front panel of the switch.

1.4 The Rear Panel

The following figure shows the rear panel of the switch:



Power socket

The power socket located at the right side of the rear panel, is where you should connect the power

adapter. Please use the +5V/1A power adapter provided with the Easy Smart GbE Switch. After the switch powered on, the power LED is lit for a normal power status.

1.5 Installation

Desktop Installation

1. Place the switch on a flat desk.
2. Inspect the Power Adapter carefully and make sure that it is properly connected to a power source.
3. Ensure adequate ventilation space around the switch for dissipating heat and air.
4. Power on the switch and it will automatically initialize and power LED turn on.

Installing Network Cables

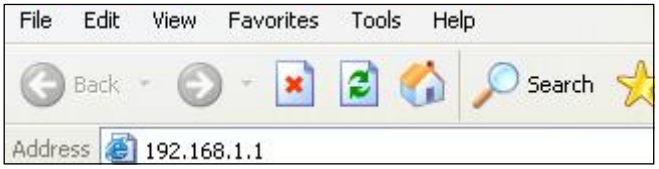
To make a valid connection and obtain the optimal performance, an appropriate cable that corresponds to different transmitting/receiving speed is required. To choose a suitable cable, please refer to the following table.

Media	Speed	Wiring
Network Media(Cable)	10 Mbps	10Base-T: UTP category 3, 4, 5 cable (maximum 100m) EIA/TIA-568 100Ω STP (maximum 100m)
	100 Mbps	100Base-TX: UTP category 5, 5e cable (maximum 100m) EIA/TIA-568 100Ω STP (maximum 100m)
	1000 Mbps	1000Base-T: UTP category 5e, 6 cable (maximum 100m) EIA/TIA-568 100Ω STP (maximum 100m)

Chapter 2 Getting Started

2.1 Connect to switch Web Pages

1. To connect to the web server, input the IP of switch in the URL field of the browser.
2. The default IP is 192.168.1.1 and default Subnet mask is 255.255.255.0
3. Type “http://”and the IP address of the switch (for example, the default management IP address is 192.168.1.1) in the Location or Address field. Press **Enter.**

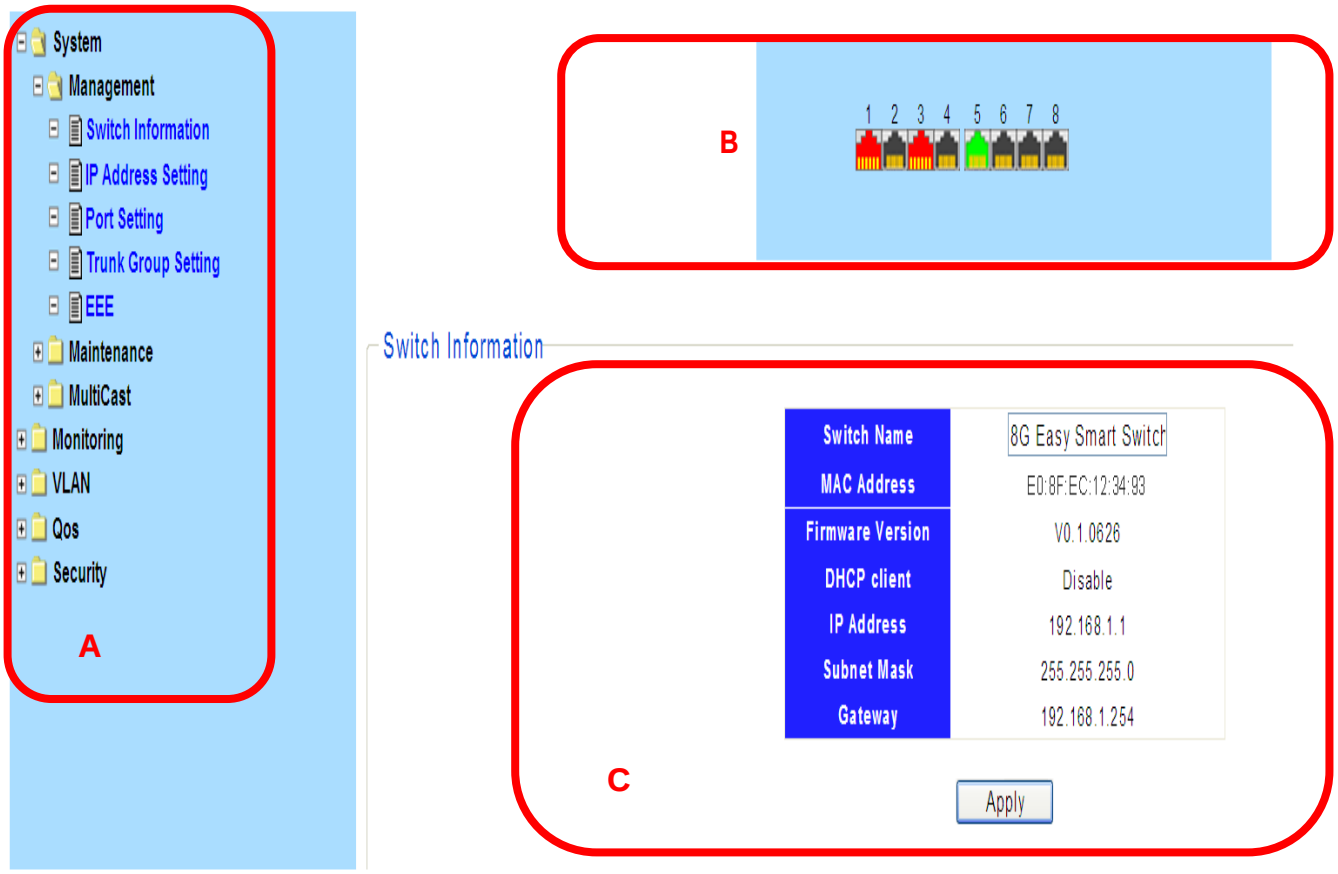


4. The login screen appears. Enter the User Name and Password to login the configuration interface. They are both **admin** by default. You can select **Remember my password** to remember the User Name and Password.

Connect to 192.168.1.1
The server 192.168.1.1 at Switch requires a username and password.
Warning: This server is requesting that your username and password be sent in an insecure manner (basic authentication without a secure connection).
User name:
admin
Password:
Remember my password
OK
Cancel

2.2 Graphic User Interface Overview

After the password authorization, the information page shows up. You may click on each folder on the left column of each page to get access to each configuration page. The Graphic User Interface is as follows:

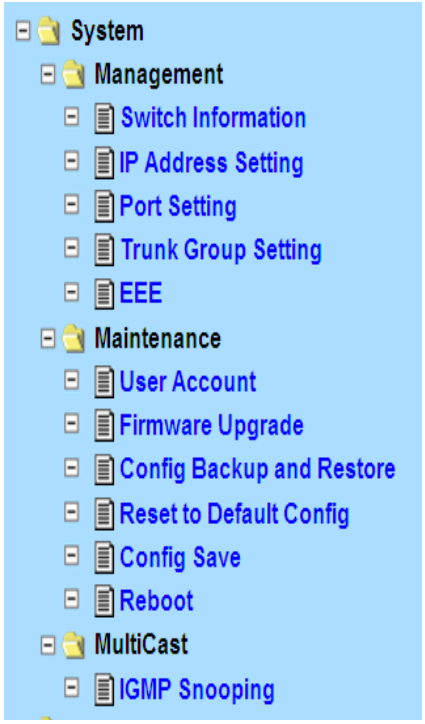
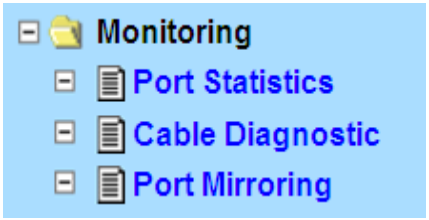
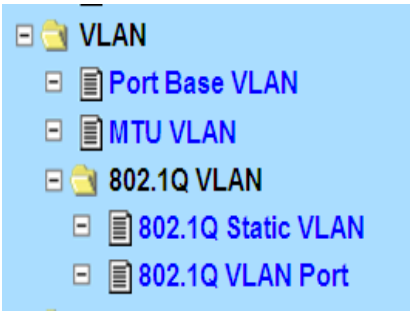


A –Click the menu items to open submenu links, and then click on a submenu link to open the screen in the main window.

B –It shows the switch's current link status. Green squares indicate the port link is up, while black squares indicate the port link is down. Red squares indicate the port on network loop status.

C –Displays system information such as MAC address and firmware version.

In the navigation panel, click a main link to reveal a list of submenu links shown as the following:

System	Monitoring	VLAN
		
Qos	**Security**	

The following table describes the links in the navigation panel.

LINKS	DESCRIPTION
System-Management	
Switch Information	This link takes you to a screen that changes/displays general information of the switch including switch name, MAC address, firmware version, DHCP mode, IP address, subnet mask and gateway address.
IP Address Setting	This link takes you to a screen where you can set and view the IP address, subnet mask and gateway values of the switch.
Port Setting	This link takes you to a screen where you can configure and view the basic parameters of each port, including the port status, speed, duplex mode and flow control.
Trunk Group Setting	This link takes you to a screen where you can configure settings for the trunk group.

EEE	This link takes you to enable or disable port EEE(Energy Efficient Ethernet) function.
System-Maintenance	
User Account	This link takes you to a screen where you can change the web configuration login account and password.
Firmware Upgrade	This link takes you to a screen where you can upgrade the firmware.
Config. Backup and Restore	This link takes you to a screen where you can save the current configuration file to your computer or download a backup configuration file to your switch.
Reset to Default Config	This link takes you back to default factory settings and restart the system.
Config Save	This link takes you to a screen where you can save all the configurations you have made to the switch effectively, so that you can use the same configurations next time.
Reboot	This link takes you to a screen where you can reboot the switch.
System-Multi Cast	
IGMP Snooping	This link takes you to a screen where you can configure the IGMP snooping setting.
Monitoring	
Port Statistics	This link displays port network traffic for the switch.
Cable Diagnostic	This link takes you to a screen where you can diagnose the connection status of the cable connected to the switch and the distance to the problem location.
Port Mirroring	This link takes you to a screen where you can monitor and mirror network traffic by forwarding copies of incoming and outgoing packets from one/multiple ports(mirrored port) to a specific port(mirroring port).
VLAN	
Port Base VLAN	This link takes you to a screen where you can set the Port-Based VLAN mode.
MTU VLAN	This link takes you to a screen where you can set the MTU VLAN mode.
VLAN-802.1Q VLAN	
802.1Q Static VLAN	This link takes you to a screen where you can set the 802.1Q Tag VLAN mode.
802.1Q VLAN Port	This link takes you to a screen where you can configure the 802.1Q PVID value.
Qos	
Port-based Priority	This link takes you to a screen where you can set the priority queue for the ports to determine the priority of ports' receiving and transmitting data.
Bandwidth Control	This link takes you to a screen where you can configure and view the bandwidth control function information.
Security	

Storm Filter	This link takes you to a screen where you can filter or limit broadcast, multicast, unknown unicast and unknown multicast frame in the network.
Loop Prevention	This link takes you to a screen where you can setup loop prevention and loop detection features.
DHCP Snooping	This link takes you to a screen where you can configure the DHCP snooping settings.

Chapter 3 System

The System page is mainly for system configuration of the switch, including management , maintenance and multicast setting for the switch.

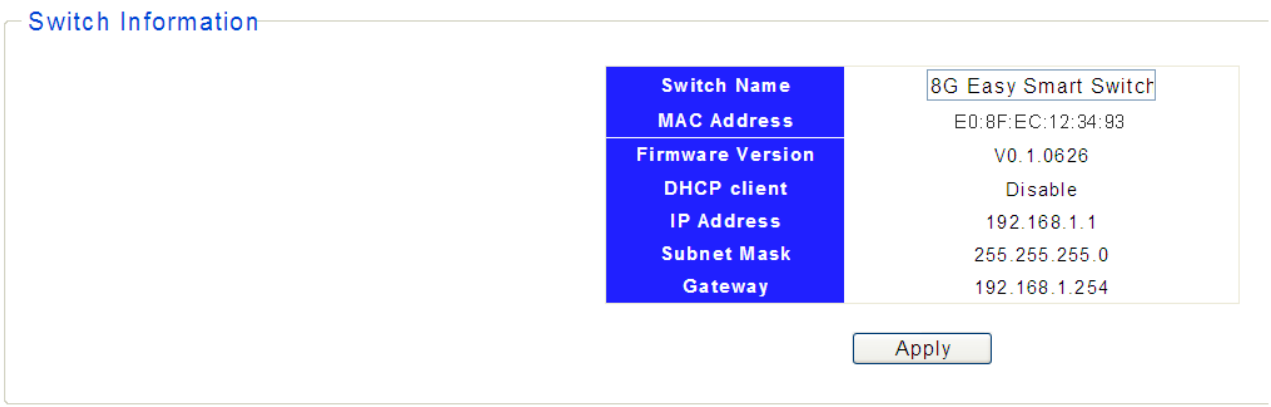
3.1 Management

Use the Management pages to view switch information and configure some settings for ports, trunk group and EEE.

3.1.1 Switch Information

Click **System** > **Management** > **Switch Information**

On this page user can configure and browse some switch information such as Switch name, MAC address, IP address, Gateway and Firmware Version and so on.



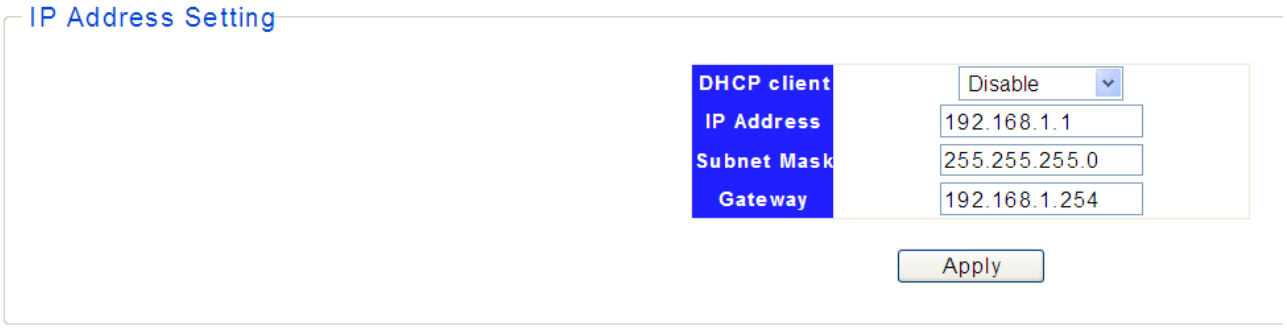
With editable textbox in the table，user could configure the field value.

LABEL	DESCRIPTION
Switch Name	Name of the switch, can be modified for identifying other different switches.
MAC Address	Displays the MAC address of the switch.
Firmware Version	Displays the installed software version number.
DHCP Client	Displays the status of the DHCP function for the switch.
IP Address	Displays the system IP address of the switch
Subnet Mask	Displays the subnet mask of the switch.
Gateway	Displays the gateway IP Address of the switch.
Apply	Click **Apply** to make the settings take effect.

3.1.2 IP Address Setting

Click **System** > **Management** > **IP Address Setting**

On this page user can get and modify the network parameters of the switch.



With editable textbox in the table，user could configure the field value.

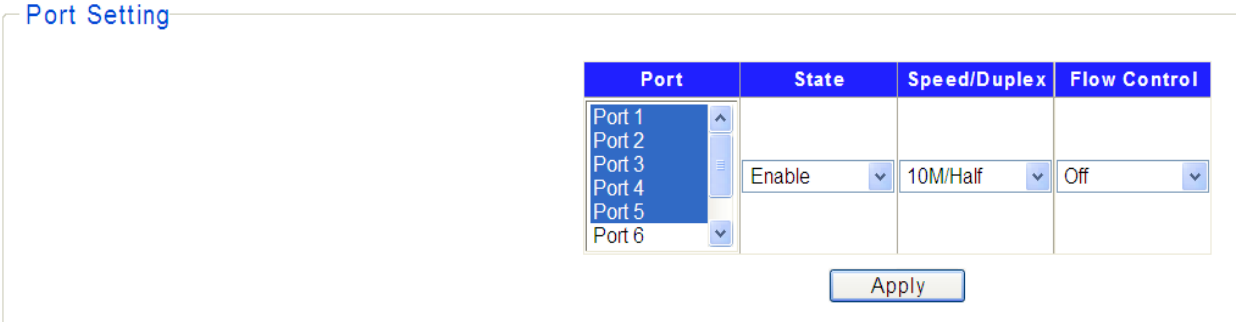
LABEL	DESCRIPTION
DHCP Client	**Enable** or **Disable** the DHCP function. If DHCP setting is enabled, the switch will obtain the IP address, subnet Mask and default gateway from the DHCP Server automatically; otherwise, these three items should be configured manually.
IP Address	Enter the system IP address of the switch. The default system IP is 192.168.1.1 and you can change it appropriately to your needs.
Subnet Mask	Enter the subnet mask of the switch. By default, the switch uses 255.255.255.0 as the subnet mask.
Gateway	Enter the gateway IP Address of the switch.
Apply	Click **Apply** to make the settings take effect.

3.1.3 Port Setting

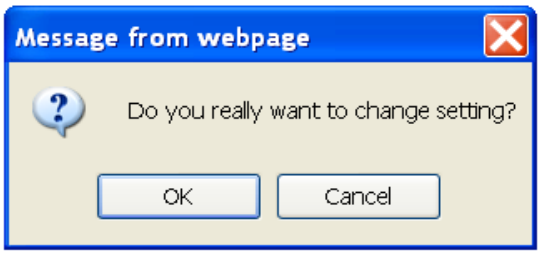
Click **System** > **Management** > **Port Setting**

This page shows link status, speed, duplex, and flow control ability of all ports. User can change port ability of switch in this page.,

1. Hold **"Ctrl"** and the left button of the mouse to select the ports you need**,** and select the state, speed/duplex, flow control of the ports.



2. Click **Apply**, then the remind view pops up.



3. Press **OK**, and wait for several seconds to make the setting of ports take effect, then you'll see the page as below.

Port	State	Speed/Duplex		Flow Control	
		Config	Actual	Config	Actual
Port 1	Enable	10 Half	Link Down	Off	Off
Port 2	Enable	10 Half	Link Down	Off	Off
Port 3	Enable	10 Half	Link Down	Off	Off
Port 4	Enable	10 Half	Link Down	Off	Off
Port 5	Enable	10 Half	Link Down	Off	Off
Port 6	Enable	Auto	Link Down	On	Off
Port 7	Enable	Auto	100Full	On	Off
Port 8	Enable	Auto	Link Down	On	Off

The following table describes the labels in this screen.

LABEL	DESCRIPTION
Port Config	
Port	Select the desire port for configuration from the list box.
State	Allows you to Enable/Disable the port. When Enable is selected, the port can forward the packets normally.
Speed/Duplex	Select the Port speed/duplex capabilities for the ports you need: · **Auto:** Auto-negotiation speed/ duplex with all capabilities. · **10M/Half:** Set speed with 10M half-duplex ability only. · **10M/Full:** Set speed with 10M full-duplex ability only. · **100M/Half:** Set speed with 100M half-duplex ability only. · **100M/Full:** Set speed with 100M full-duplex ability only.
Flow Control	Select **on/off** to enable/disable the flow control ability of the selected ports.
Apply	Click **Apply** to make the settings take effect immediately.
Port Status Table	
Port	Displays the port number.
State	Displays the actual state of the ports.
Speed/Duplex	**Config:** Displays the configuration of Speed and Duplex mode for the port. **Actual:** Displays the actual working state of the port.

Flow Control	**Config:** Displays the configuration of the Flow Control for the port. **Actual:** Displays the actual working state of the port.

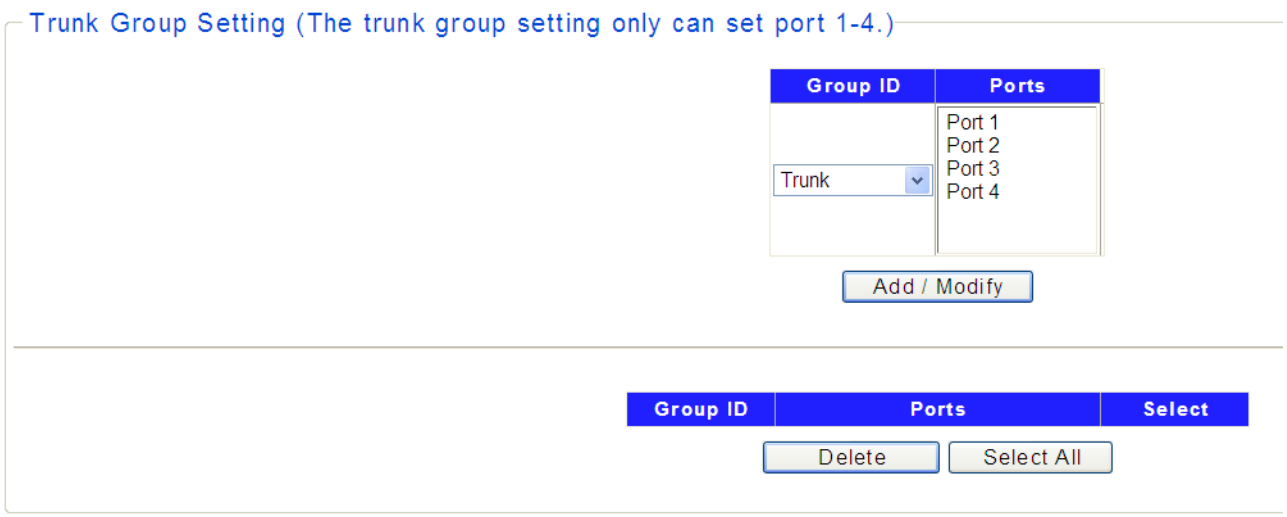
Note:

1. The switch can't be managed through the disable port.
2. The switch might lose connection temporarily for the specific port (which connect to the management PC) setting. If it happens, refresh WEB GUI can recover the connection.

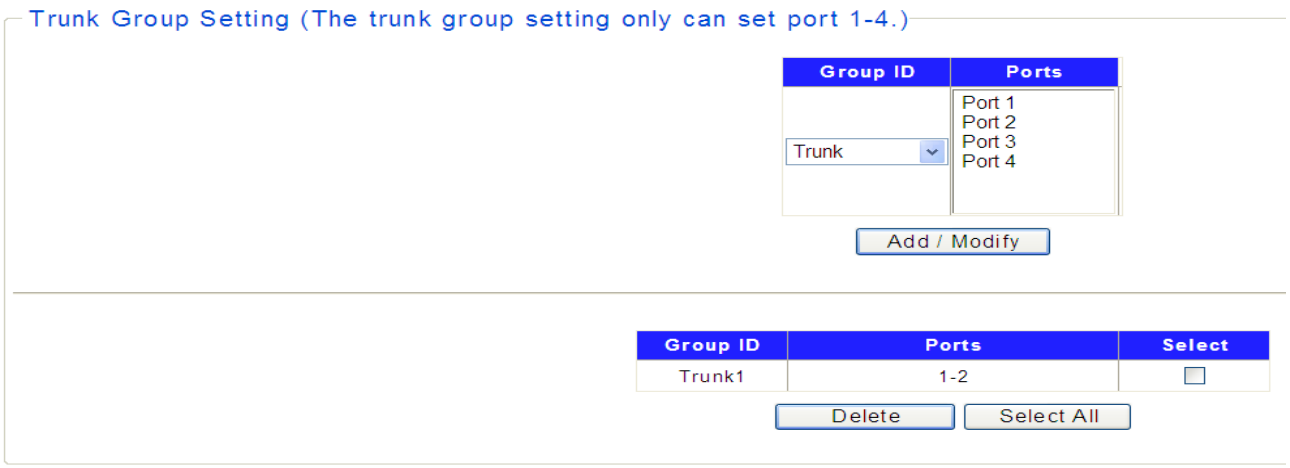
3.1.4 Trunk Group Setting

Click **System >Management> Trunk Group Setting**

Trunk group is used to combine a number of ports together to make a single high-bandwidth data path, which can highly extend the bandwidth. The bandwidth of the trunk is the sum of bandwidth of its member ports. Provides Port trunk by one group two ports



Hold "Ctrl" and the left button of the mouse to select two ports for trunk group setting, click **Add / Modify**, and then you can view the port parameters as shown below.



The following table describes the labels in this screen.

LABEL	DESCRIPTION
Trunk Group Config	
Group ID	Displays the Trunk Group ID.
Ports	Select the ports as the trunk group member.
Add/Modify	Click to select the action of operation, to add/modify Trunk Group to the switch.
Trunk Group Table	
Group ID	Displays the Trunk Group as Trunk1.
Ports	Displays the Trunk member ports.
Select	**Select** and enable the Trunk Group.
Select All	Click **Select All** to select and enable the Trunk Group
Delete	Click **Delete** to delete the Trunk Group.

Note:

1. Only supports one group (Trunk 1) and two ports from port 1 to port4.
2. For the member ports in a trunk group, their configuration of port setting & QoS must be the same

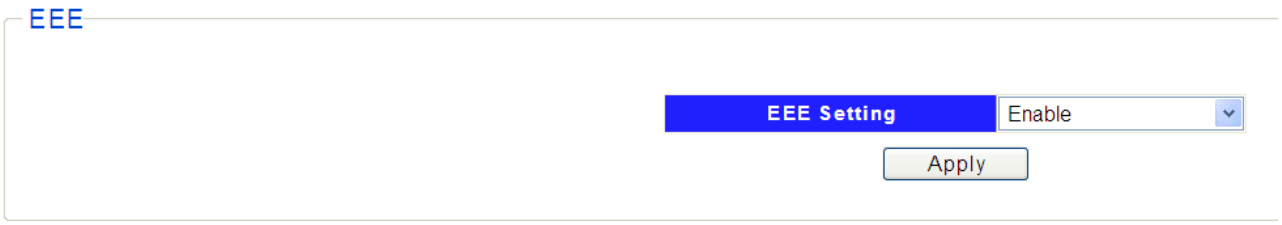
3.1.5 EEE

Click **System >Management> EEE**

This page allows user to enable or disable EEE (Energy Efficient Ethernet) function.

1. In the EEE setting list, select **Enable** or **Disable** EEE.

2. Click **Apply** to set up this function.



The following table describes the labels in this screen.

LABEL	DESCRIPTION
EEE function	Port EEE function. ■ **Enabled**: Enable EEE function ■ **Disabled**: Disable EEE function
Apply	Click **Apply** to make the settings take effect immediately.

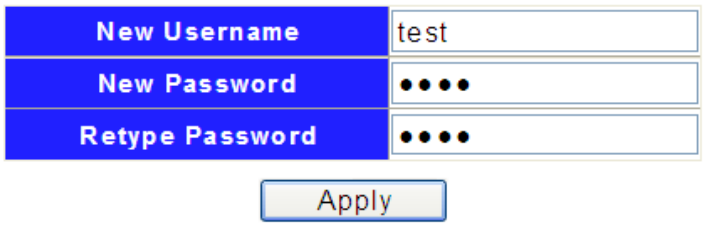
3.2 Maintenance

The Maintenance pages are doing the switch user account, Firmware upgrade, Configuration Backup/Restore, Reset to default configuration, Configuration Save and Reboot functions.

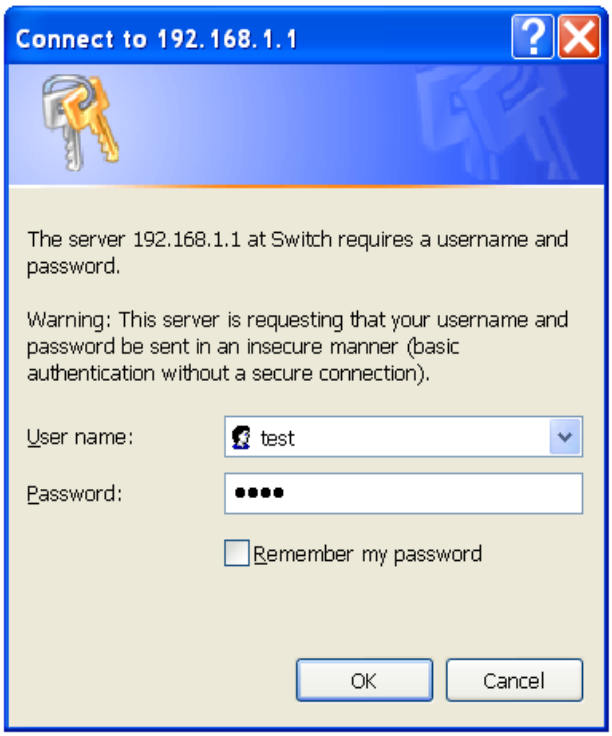
3.2.1 User Account

Click **System** > **Maintenance** > **User Account**
This page user can change the administrator's username and password in order to refuse illegal users.

1. Enter the new username and password, click **Apply**.



2. Then the login screen appears, enter the new username and password，click **OK** to login the configuration interface of User Account again.


Connect to 192.168.1.1
The server 192.168.1.1 at Switch requires a username and password.
Warning: This server is requesting that your username and password be sent in an insecure manner (basic authentication without a secure connection).
User name:
test
Password:
Remember my password
OK
Cancel

The following table describes the labels in this screen.

LABEL	DESCRIPTION
New Username	Create a name for administrator's login.
New Password	Type in a new password for administrator's login.
Retype Password	Retype password to make sure the password is exactly you typed before in "New Password" field.
Apply	Click **Apply** to make the settings take effect immediately.

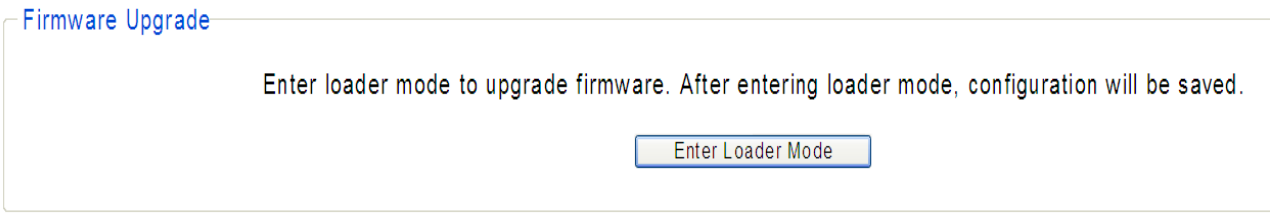
Note:

1. Only digits, letters and underlines can be used for creating the user name and password. The length of user name should not be more than 20 characters and the password should not be more than 17 characters.
2. The default user name/password is admin/admin.

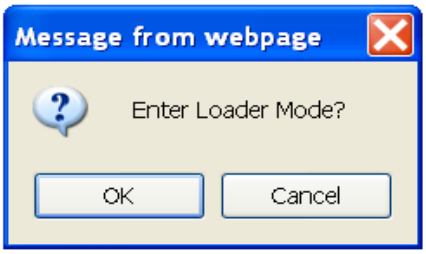
3.2.2 Firmware Upgrade

To upgrade switch firmware, first download a firmware upgrade file to your computer. User can select to upgrade firmware thought TFTP or HTTP.

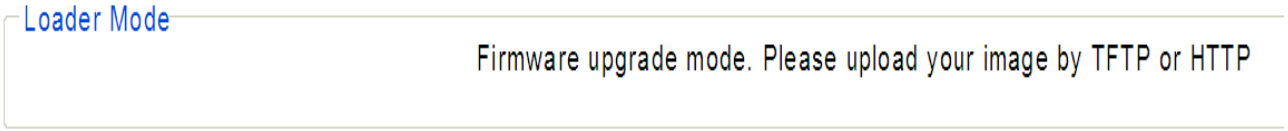
Click **System** > **Maintenance** > **Firmware Upgrade.** The switch system can be upgraded via this management page.


Firmware Upgrade
Enter loader mode to upgrade firmware. After entering loader mode, configuration will be saved.
Enter Loader Mode

1. Enter the **Enter Loader Mode** button**,** then the confirm interface pops up.



2. Press **OK** , then the switch will save the configuration and switch to loader mode after 6 seconds. The firmware upgrade screen displays as shown below.

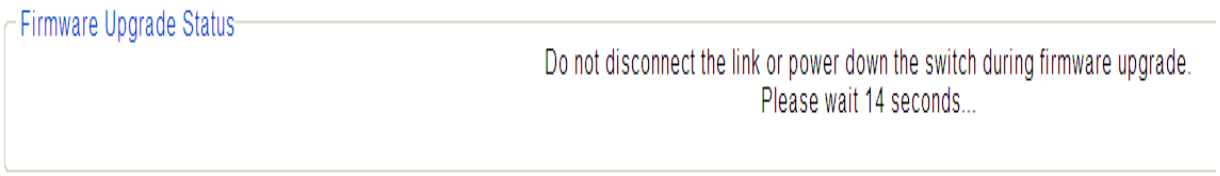


3. If you select to upgrade firmware thought TFEP, click **Firmware Upgrade** < **TFTP Firmware Upgrade** to view the screen as shown below.

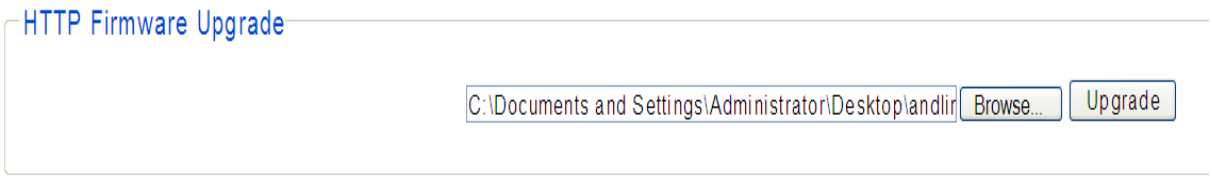
4. Enter the **Image File Name** and click **Download Image**, then a remind interface pops up.

Message from webpage
It takes several seconds for FW downloading process. After firmware downloading is complete, the switch automatically reboots. This briefly disrupts network traffic through the switch. Continue?
OK
Cancel

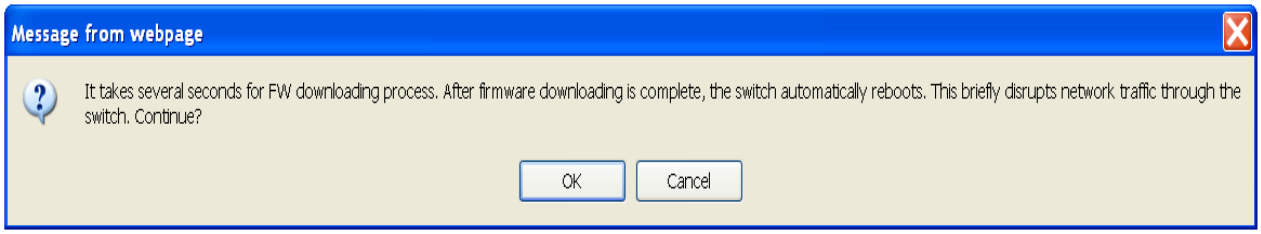
5. Click **OK** and wait for several seconds to download the firmware, then you'll see the upgrade status interface as shown below. After finishing the TFTP upgrade procedure, switch will reboot automatically.


Firmware Upgrade Status
Do not disconnect the link or power down the switch during firmware upgrade.
Please wait 14 seconds...

6. If you select to upgrade firmware thought HTTP, click **Firmware Upgrade** < **HTTP Firmware Upgrade** to view the screen as shown below.
7. Click the **Browse** button to the location on your computer containing the firmware upgrade file and select the upgrade file.



8. Click **Upgrade,** then the remind interface pops up, press **OK** to operate the upgrade procedure.


Message from webpage
It takes several seconds for FW downloading process. After firmware downloading is complete, the switch automatically reboots. This briefly disrupts network traffic through the switch. Continue?
OK
Cancel

9. After finishing the HTTP upgrade procedure, switch will reboot automatically.

The following table describes the labels in this screen.

LABEL	DESCRIPTION
TFTP Server IP Address	IP address of the TFTP server.
Image File Name	Firmware image or configuration file name on remote TFTP server.
Download Image	Download Image file from TFTP server to switch.
Browse	Browse the image file on your computer.
Upgrade	Click **Upgrade** to update the specified file selected from browse file and install the new firmware after selecting the HTTP upgrade method.
Reboot	Press Reboot button, can reboot switch.

Note:

1. Don't turn-off the switch and disconnect the link while firmware upgrading.
2. You are suggested to backup the configuration before upgrading.

3.2.3 Config. Backup and Restore

Click **System** > **Maintenance** > **Config. Backup and Restore**

On this page user can download the current configuration and save it as a file to your computer, or upload a backup configuration file to restore your switch to this previous configuration.

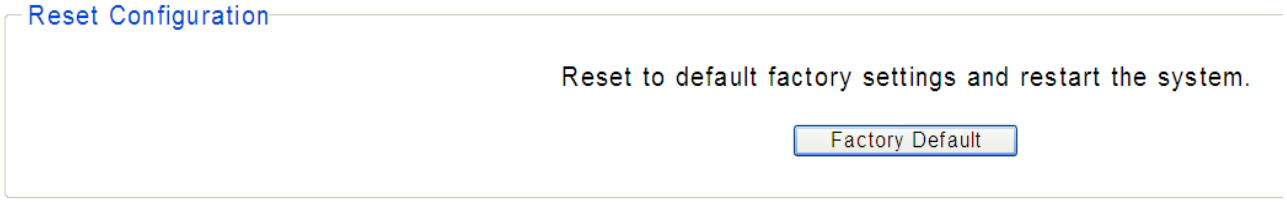
The following table describes the labels in this screen.

LABEL	DESCRIPTION
Backup	Click the **Backup** button to save the current configuration as a file to your computer. You are suggested to take this measure before upgrading
Restore	Click the **Browse** button to select the backup configuration file, and then click the **Restore** button. It will take effect after the switch reboots.

3.2.4 Reset to Default Config

Click **System** > **Maintenance** > **Reset to Default Config**

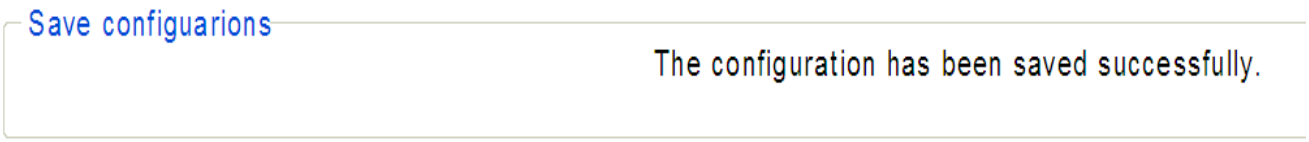
On this page user can reset the switch to the factory default configuration. All the settings will be cleared after the switch is reset. Follow the steps below to reset the switch back to the factory defaults.



1. Click **Factory Default** to reset all switch configurations to the factory defaults and the switch will restart automatically.

3.2.5 Config Save

Click **System**>**Maintenance**>**Config Save**
You can save the current configuration easily by clicking the Config Save menu without any function button and you'll see the successful page directly.



Config Save Page

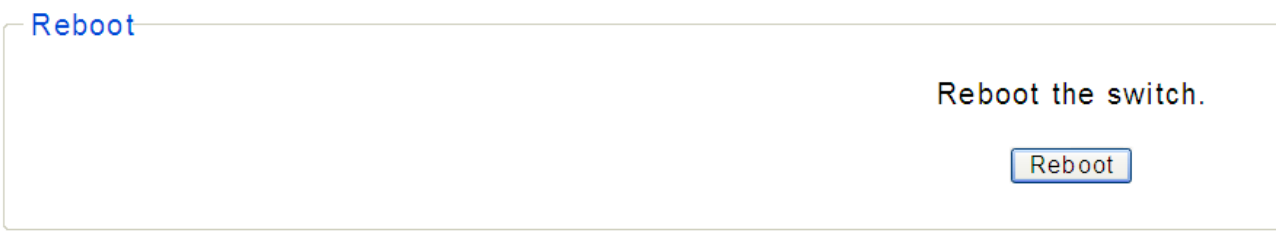
Note:

1. To avoid damage, please don't turn off the device before the configuration saved successfully.
2. Only by clicking the Config Save menu can you save the current configuration of the switch effectively, so that the configuration you made this time will remain in effect next time you start it.

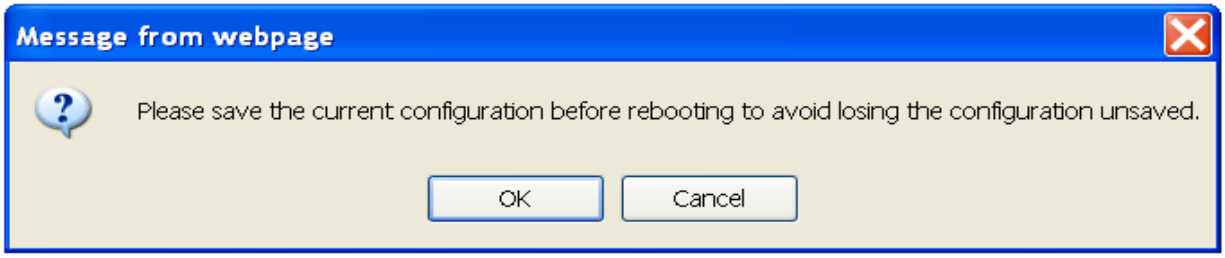
3.2.6 Reboot

Click **System**>**Maintenance**> **Reboot**
Allow you to restart the switch without physically turning the power off.
Follow the steps below to reboot the switch.

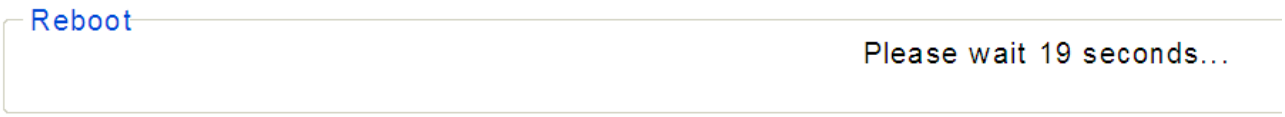
1. Click **Reboot** to view the screen as shown next.



2. Click **Reboot** button, then the following remind view pops up, Click **OK**.


Message from webpage
Please save the current configuration before rebooting to avoid losing the configuration unsaved.
OK
Cancel

3. The switch will be restarted directly in about 20 seconds without any successful page.



3.3 MultiCast

Internet Group Management Protocol (IGMP) snooping is a multicast control mechanism, which can be used on the switch for dynamic registration of the multicast group.
Internet Group Management Protocol (IGMP) snooping allows a switch to forward multicast traffic intelligently on the switch. This feature prevents the switch from broadcasting the traffic to all ports and possibly affecting network performance.

3.3.1 IGMP Snooping

Click **System** > **MultiCast** > **IGMP Snooping**
On this page user can enable or disable IGMP snooping feature.

The following table describes the labels in this screen.

LABEL	DESCRIPTION
IGMP Snooping	Enable or Disable IGMP snooping function globally on the switch.
Apply	Click **Apply** to make the settings take effect immediately.

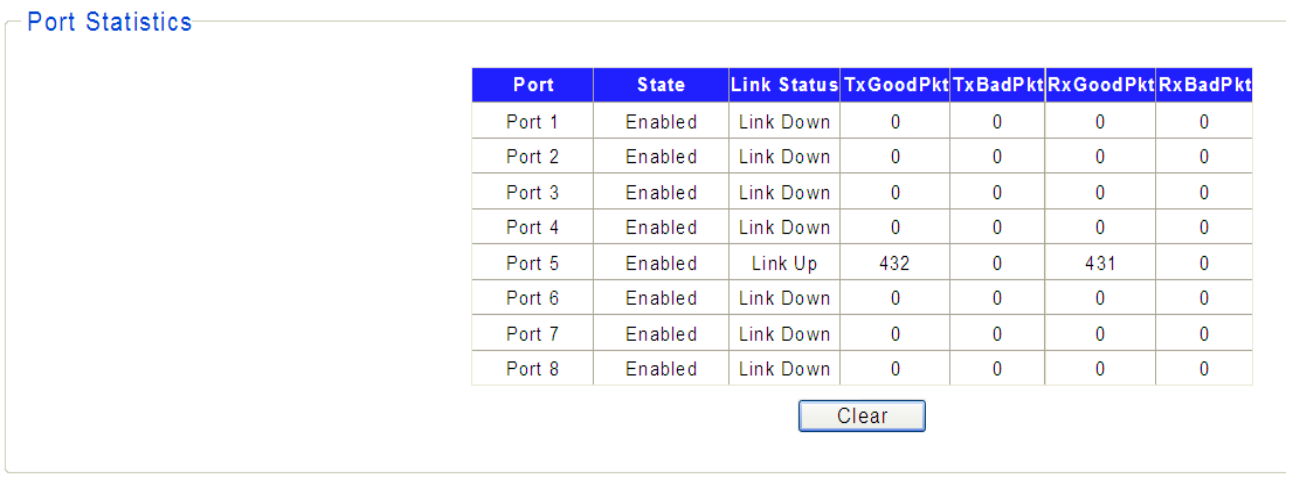
Chapter 4 Monitoring

The Monitoring page monitors port statistics information, perform cable diagnostic and allows you to configure port mirroring.

4.1 Port Statistics

Click **Monitoring > Port Statistics**

On this page user can view the statistic information of each port, which facilitates you to monitor the traffic and locate faults promptly.


Port Statistics
Port State Link Status TxGoodPkt TxBadPkt RxGoodPkt RxBadPkt
Port 1 Enabled Link Down 0 0 0 0
Port 2 Enabled Link Down 0 0 0 0
Port 3 Enabled Link Down 0 0 0 0
Port 4 Enabled Link Down 0 0 0 0
Port 5 Enabled Link Up 432 0 431 0
Port 6 Enabled Link Down 0 0 0 0
Port 7 Enabled Link Down 0 0 0 0
Port 8 Enabled Link Down 0 0 0 0
Clear

The following table describes the labels in this screen.

LABEL	DESCRIPTION
Port	Displays the port number of the switch.
State	Displays whether the port is enabled or disabled.
Link Status	Displays the link state of the port.
TxGoodPkt	Displays the number of good packets transmitted on the port. The error packets are not counted in.
TxBadPkt	Displays the number of error packets transmitted on the port.
RxGoodPkt	Displays the number of good packets received on the port. The error packets are not counted in.
RxBadPkt	Displays the number of error packets received on the port.
Clear	Click to reset content of screen

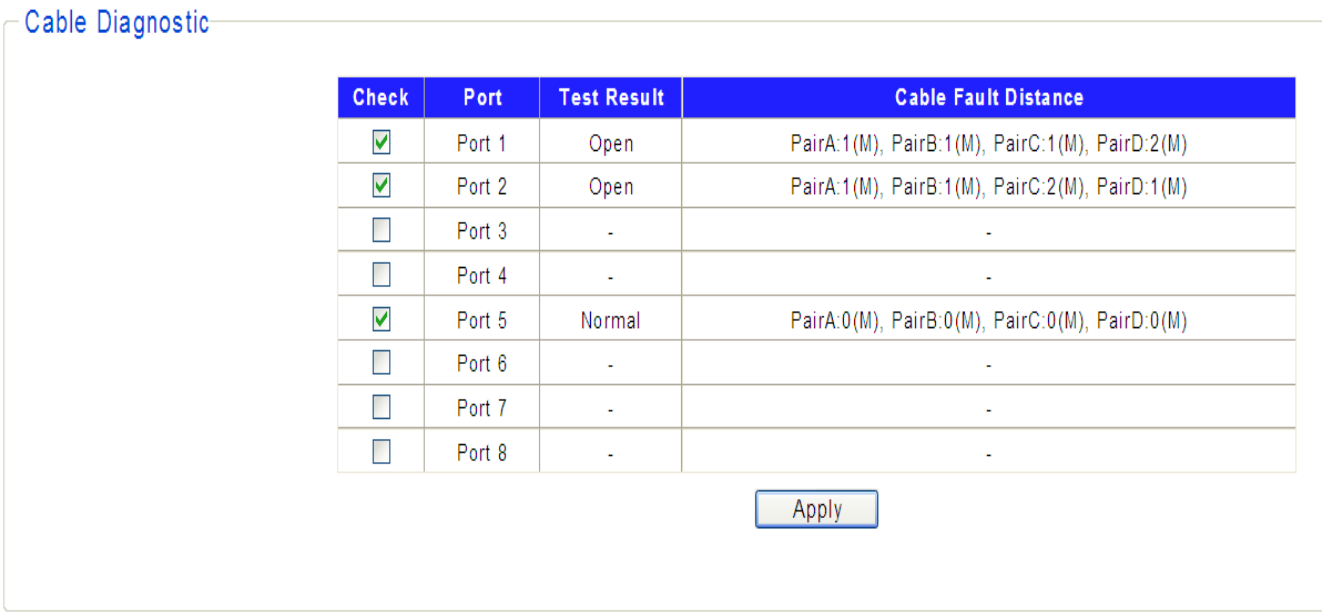
4.2 Cable Diagnostic

Click **Monitoring**> **Cable Diagnostics**

This switch provides cable diagnostic to check the connection status of the cable connected to the

switch and the distance to the problem location, which facilitates you to locate and diagnose the trouble spot of the network.

Select the ports to be diagnosed and click **Apply.**



The following table describes the labels in this screen.

LABEL	DESCRIPTION
Check	Click the checkbox to select the port to be diagnosed.
Port	Displays the port number of the switch.
Test Result	Displays the cable connection status : ■ **Open:** The cable is broken or no cable connection. Get the cable broken distance by “Cable Fault Distance” field. ■ **Normal:** The cable is good without broken, the “Cable Fault Distance” field is meaningless.
Cable Fault Distance	Displays the error length of the cable.
Apply	Click **Apply** to make the settings take effect immediately.

4.3 Port Mirroring

Click **Monitoring > Port Mirroring**

Port mirror function is to monitor and mirror network traffic by forwarding copies of incoming and outgoing packets from one port (mirrored port) to a specific port (mirroring port).

1. Select mirror direction to select “disable/rx/tx/both” forwarding packets
2. Select a port as the mirroring port.

3. Select a port as the mirrored port
4. Click Apply

The following table describes the labels in this screen.

LABEL	DESCRIPTION
Mirror Direction	Select mirror direction: user can select disable/rx/tx/both four items to mirror selected port
Mirroring Port	Select mirror session port to operate monitoring function
Mirrored Port List	Select mirrored port to be monitored.
Apply	Click **Apply** to make the settings take effect immediately.
Delete	Click **Delete** to remove port mirror setting.

Chapter 5 VLAN

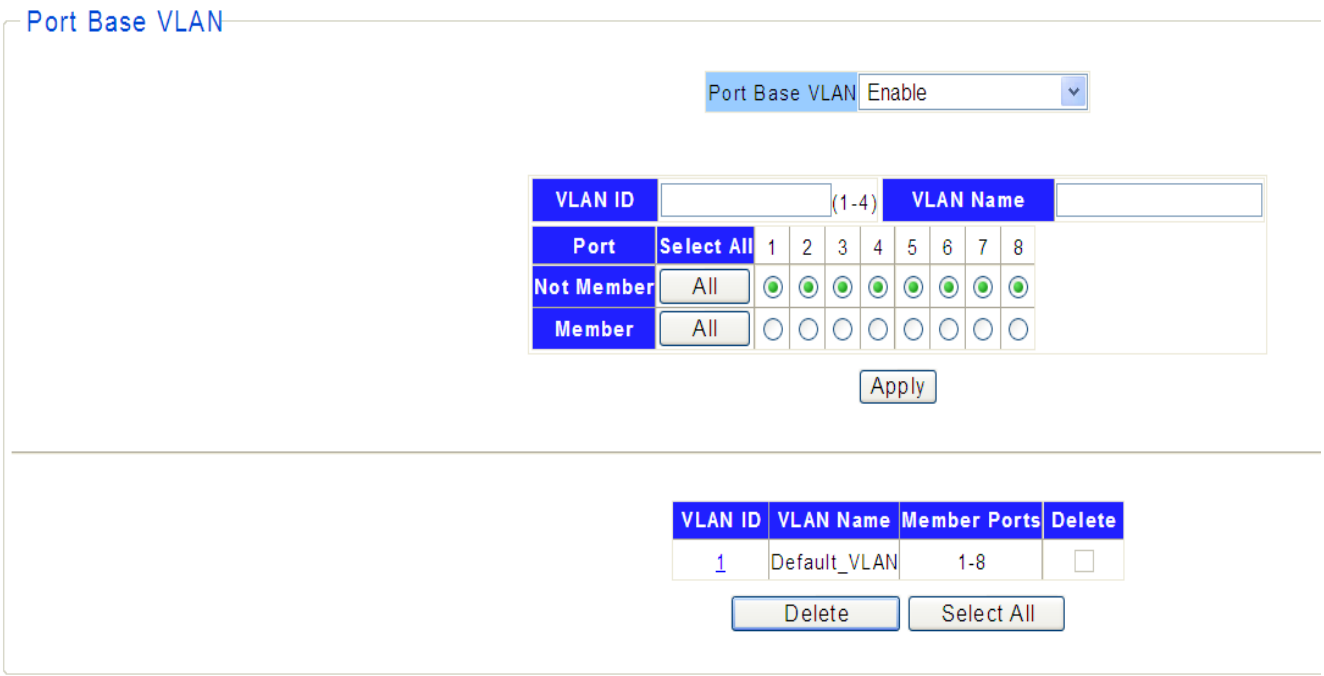
A VLAN is a group of end stations with a common set of requirements, independent of physical location. VLANs have the same attributes as a physical LAN but allow you to group end stations even if they are not located physically on the same LAN segment.

You can group ports on a switch to create a virtual network made up of the devices connected to the ports. VLANs can be grouped using port-based or 802.1Q criteria.
The VLAN configuration includes Port Base VLAN, MTU VLAN & 802.1Q VLAN.

5.1 Port Base VLAN

Click **VLAN** > **Port Base VLAN**
Allow you to assign ports to virtual networks. Data from a port that is a member of a VLAN group is restricted to other members of that VLAN group. This feature provides an easy way to partition a network into private sub networks

1. Select **Enable** to enable port Based VLAN mode.
2. Enter **the VLAN ID** and **VLAN Name**
3. Select the port of VLAN **Member**.



The following table describes the related labels in this screen.

LABEL	DESCRIPTION
Port-based VLAN Config	
Port-based VLAN	**Enable** or **Disable** Port-based VLAN mode.
VLAN ID	Enter the ID number of VLAN. It ranges from 1 to 4.
VLAN Name	Specify the **VLAN Name** for new created VLANs.
Port	Displays the port number of the switch
Select All	Click **All** to configure all ports setting.
Not Member	Click **All** or any one port to set for not member of VLAN group.
Member	Click **All** or any one port to set for member of VLAN group.
Apply	Click **Apply** to make the settings take effect immediately.
Port-based VLAN Table	
VLAN ID	Displays the ID number of VLAN.
VLAN Name	Displays the name of VLAN.
Member Ports	Displays the port member in the VLAN.
Delete	Click **Delete** to remove some VLAN ID you selected before.
Select ALL	This helps to select all VLAN ID to be deleted at one time.

Note:

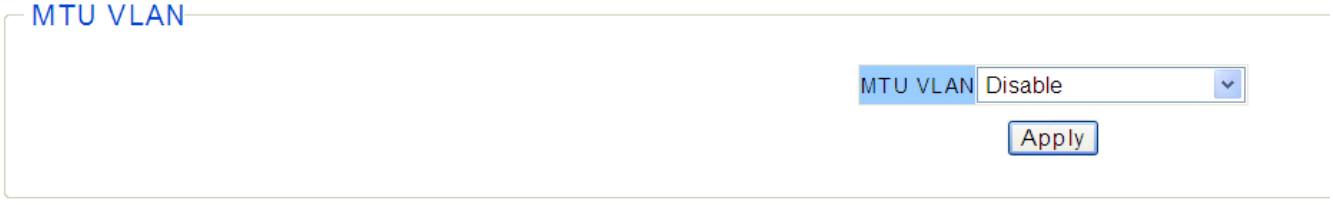
1. To ensure the normal communication of the factory switch, the default VLAN of all ports is set to VLAN1. VLAN 1 cannot be deleted.
2. You can only set the valid VLAN ID between figure 1 to 4.

5.2 MTU VLAN

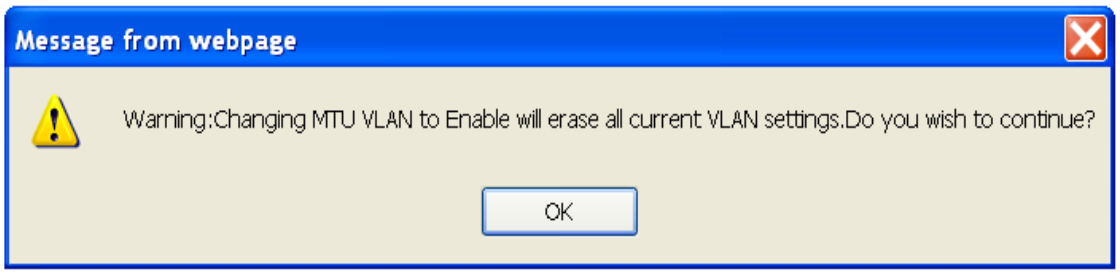
Click **VLAN** > **MTU VLAN**

MTU VLAN (Multi-Tenant Unit VLAN) defines an uplink port which will build up several VLANs with each of the other ports. Each VLAN contains two ports, the uplink port and one of the other ports in the switch, so the uplink port can communicate with any other port but other ports cannot communicate with each other.

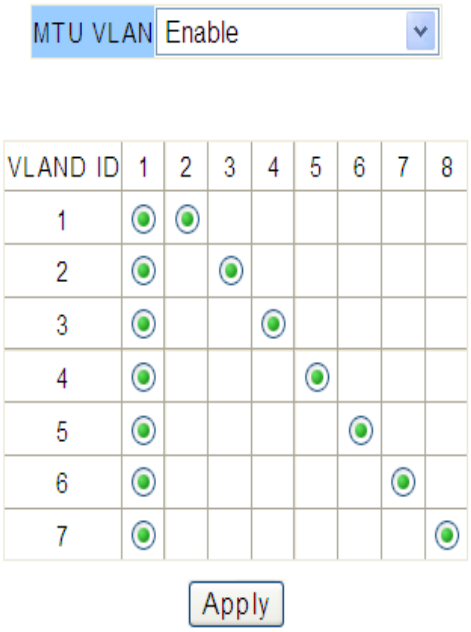
On this page you can choose to enable MTU VLAN mode and configure VLANs.



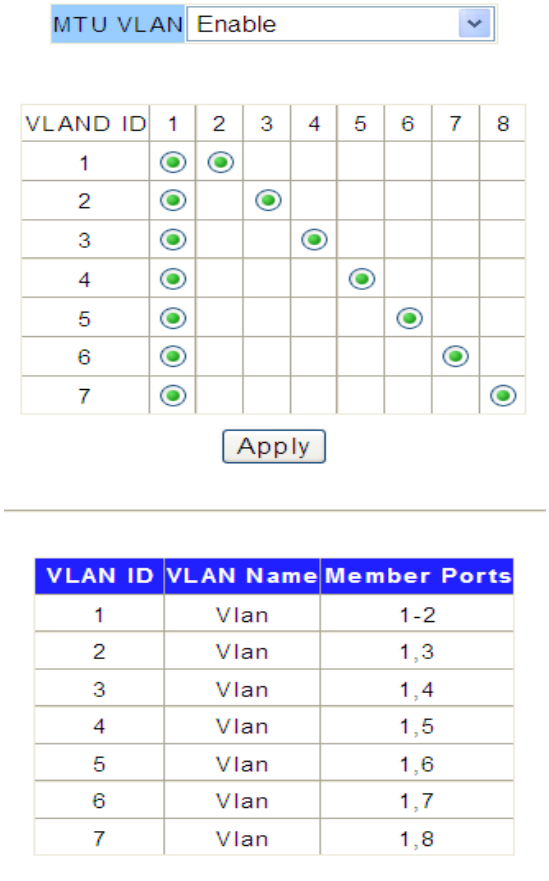
1. Click **Enable** and **Apply** to operate the MTU VLAN Setting, then pops up “Warring Message” to remind that VLAN configuration setting will be change to MTU VLAN mode.


Message from webpage
Warning:Changing MTU VLAN to Enable will erase all current VLAN settings.Do you wish to continue?
OK

2. Click **OK** to view the MTU VLAN configuration screen.



3. Select **Enable** and **Apply** to enable MTU VLAN mode.



The following table describes the labels in this screen.

LABEL	DESCRIPTION
MTU VLAN	**Enable** or **Disable** MTU VLAN mode.
VLAND ID	The factory default for VLAD ID is 1.
VLAN Name	Display the name of VLAN you set.
Member Ports	Display the member ports set for MTU VLAN.
Apply	Click **Apply** to make the settings take effect immediately.

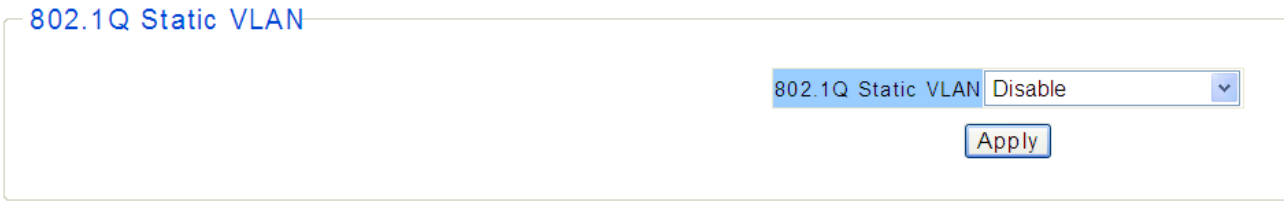
5.3 802.1Q VLAN

Allow you to create virtual networks using 802.1Q criteria. When using 802.1Q VLAN configuration, you configure ports to be a part of a VLAN group. When a port receives data tagged for a VLAN group, the data is discarded unless the port is a member of the VLAN group. This technique is useful for communicating with devices outside of your local network as well as still receiving data from other ports not in your VLAN group. It requires that you know the VLAN group IDs used.

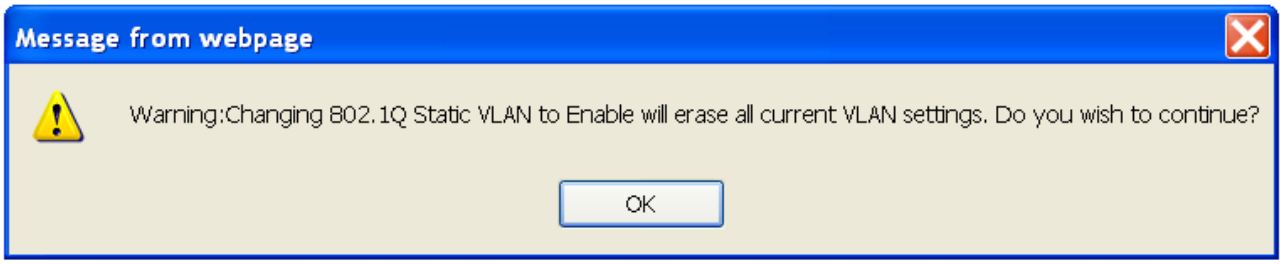
5.3.1 802.1Q Static VLAN

Click **VLAN > 802.1Q VLAN > 802.1Q Static VLAN**

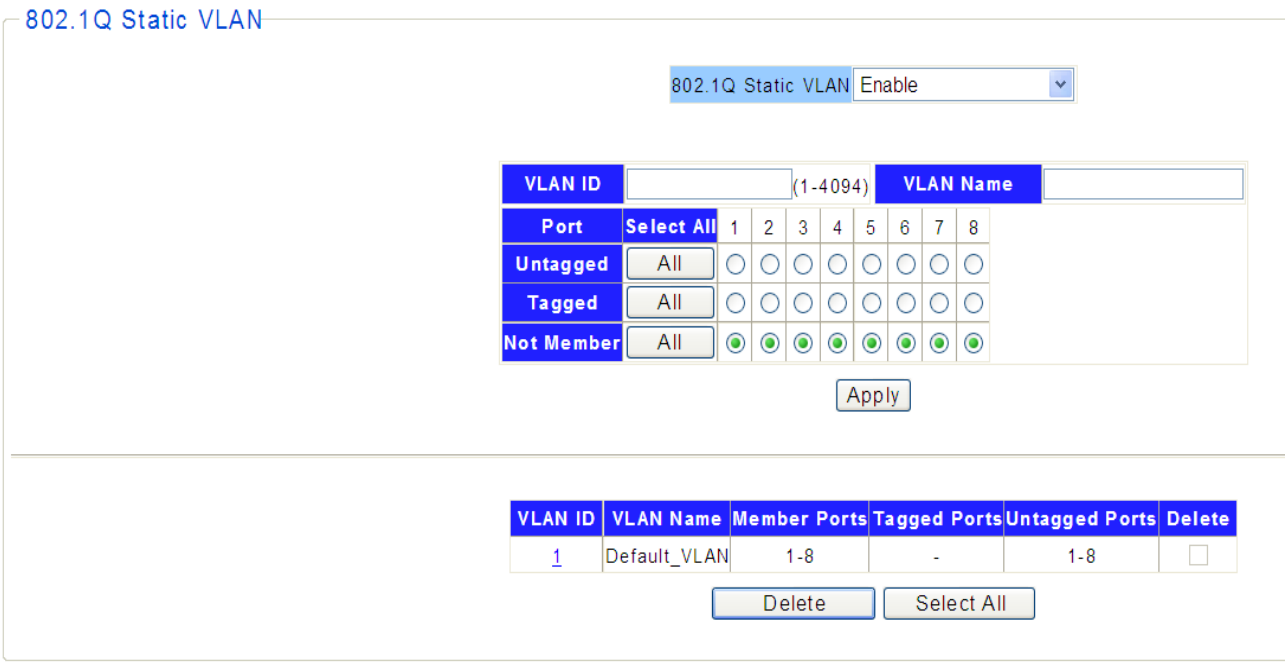
On this page user can configure 802.1Q Static VLAN feature and view the related settings.



1. Click **Enable** and **Apply** to operate the 802.1Q Static VLAN Setting, then pops up “Warring Message” to remind that VLAN configuration setting will be change to 802.1Q Static VLAN mode.


Message from webpage
Warning:Changing 802.1Q Static VLAN to Enable will erase all current VLAN settings. Do you wish to continue?
OK

2. Click **OK** to view the 802.1Q Static VLAN configuration screen as shown below.
3. Enter **the VLAN ID** and **VLAN Name**
4. Select the Untagged or Tagged port of VLAN **Member**.



The following table describes the labels in this screen.

LABEL	DESCRIPTION
802.1Q Static VLAN Config	
802.1Q Static VLAN	**Enable** or **Disable** the 802.1Q Static VLAN mode.
VLAN ID	Enter the ID number of VLAN. It ranges from 1 to 4094.
VLAN Name	Specify the **VLAN Name** for new created 802.1Q Static VLANs.
Port	Displays the port number of the switch.
Select All	Click **All** to configure all ports setting.
Untagged	Configure the egress rule of the traffic on the port as untagged. The switch drops the tag header before sending the packet.
Tagged	Configure the egress rule of the traffic on the port as tagged. The switch adds the tag header before sending the packet.
Not Member	Click **All** or any one port to set for not member of VLAN group.
Apply	Click **Apply** to make the settings take effect immediately.
802.1Q Static VLAN Table	
VLAN ID	Displays the ID number of VLAN.
VLAN Name	Displays the name of VLAN.
Member Ports	Displays the port member in the VLAN.
Tagged Ports	Displays the tagged port members in the VLAN.
Untagged Ports	Displays the untagged port members in the VLAN.
Delete	Click **Delete** to remove some VLAN ID you selected before.
Select ALL	This helps to select all VLAN ID to be deleted at one time.

Note:

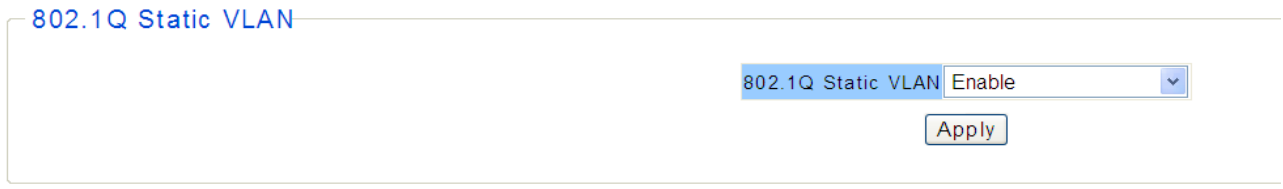
1. The default VLAN with VID being 1 cannot be removed but can modify untagged/tagged set and member ports.
2. The VLAN ID only can be set from 1 to 4094.

5.3.2 802.1Q VLAN Port

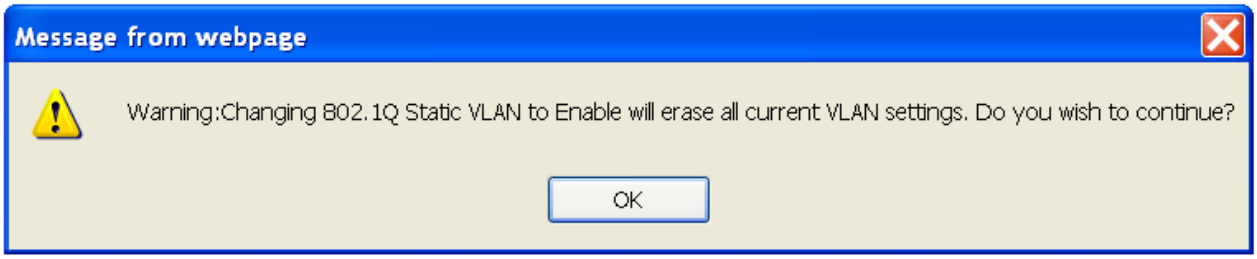
Click **VLAN > 802.1Q VLAN > 802.1Q VLAN Port**

A PVID (Port VLAN ID) is a tag that adds to incoming untagged frames received on a port so that the frames are forwarded to the VLAN group that the tag defines. If you have one unit/PC that you only want to use in VLAN4, then you set the connection port to VLAN4, and only that traffic will be send to that specific port.

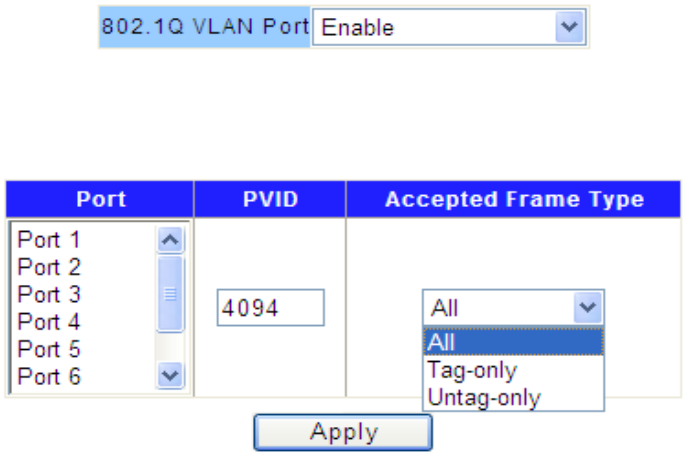
This page shows VLAN port information. User can assign PVID, tag egress mode, accepted frame type of each port.



1. Click **Enable** and **Apply** to operate the 802.1Q VLAN Port Setting, then pops up “Warring Message” to remind that VLAN configuration setting will be change to 802.1Q VLAN Port mode.


Message from webpage
Warning:Changing 802.1Q Static VLAN to Enable will erase all current VLAN settings. Do you wish to continue?
OK

2. Click **OK** to view the 802.1Q VLAN Port configuration screen as shown below.
3. Hold **“Ctrl”** and the left button of the mouse to select the ports you need**,** and enter the PVID, select the Accepted Frame Type, then click **Apply**.



Port	PVID	Accepted Frame Type
Port 1	1	All
Port 2	4094	Tag-only
Port 3	4094	Tag-only
Port 4	4094	Tag-only
Port 5	4094	Tag-only
Port 6	1	All
Port 7	1	All
Port 8	1	All

The following table describes the labels in this screen.

LABEL	DESCRIPTION
802.1Q VLAN Port Config	
802.1Q VLAN Port	**Enable** or **Disable** the 802.1Q VLAN Port mode.
Port	Select the desire port for configuration.
PVID	Enter a PVID number of the ports. It ranges from 1 to 4094. When adding the tag header to the received untagged packet, the switch will automatically uses this PVID value as the VLAN ID of the added tag.
Accepted Frame Type	Select **All/Tag-only/Untag-only** from the drop-down box to configure the accepted frame type of the selected port.
Apply	Click **Apply** to make the settings take effect immediately.
802.1Q VLAN Port Table	
Port	Displays the port number selected for configuration.
PVID	Displays the PVID number of the ports.
Accepted Frame Type	Displays the accepted frame type of the selected port.

Note:

The PVID only can be set from 1 to 4094 and default PVID of all ports is 1..

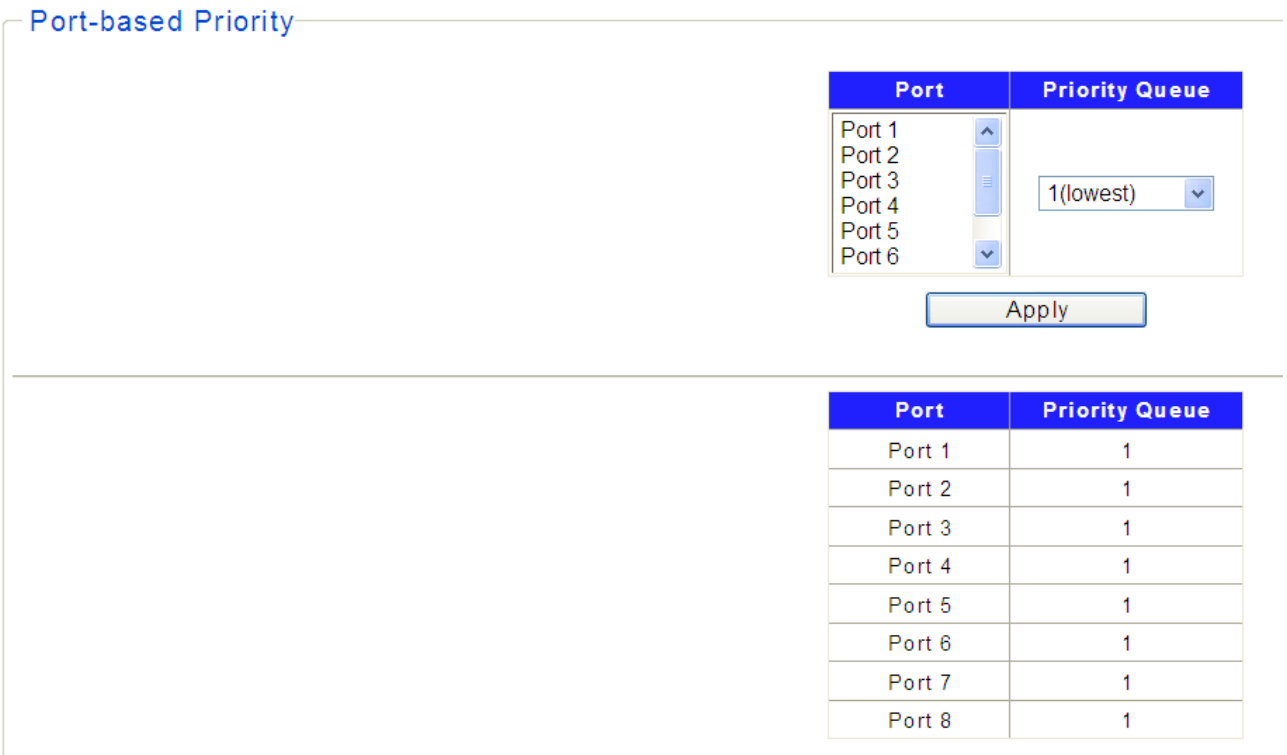
Chapter 6 QoS

QoS (Quality of Service) functions to provide different quality of service for various network applications and requirements and optimize the bandwidth resource distribution so as to provide a network service experience of a better quality. The QoS configuration includes Port-based Priority and Bandwidth Control.

6.1 Port-based Priority

Click **QoS** > **Port-based Priority**

The Port-based priority QoS can manually map the ingress packets of the port to four different priority queues. A higher priority transmits data with a minimum of delays. This switch allows user to select among four levels (lowest, medium, normal, highest).



1. Hold “Ctrl” and the left button of the mouse to select the ports that you want to have a particular priority.
2. Select the priority level that you want to assign from the list, then click **Apply**.

The following table describes the labels in this screen.

LABEL	DESCRIPTION
Port-based Priority Config	
Port	Select the desired port for configuration. It is multi-optional, you can choose eight ports at most at a time.
Priority Queue	Specify the priority queue the packets from the port are mapped to. The priorities are labeled as 1~4 and among them the bigger the value, the higher the priority.
Port-based Priority Table	
Port	Displays the port number of the switch.
Priority Queue	Displays the priority queue of all ports.
Apply	Click **Apply** to make the settings take effect immediately.

Note:

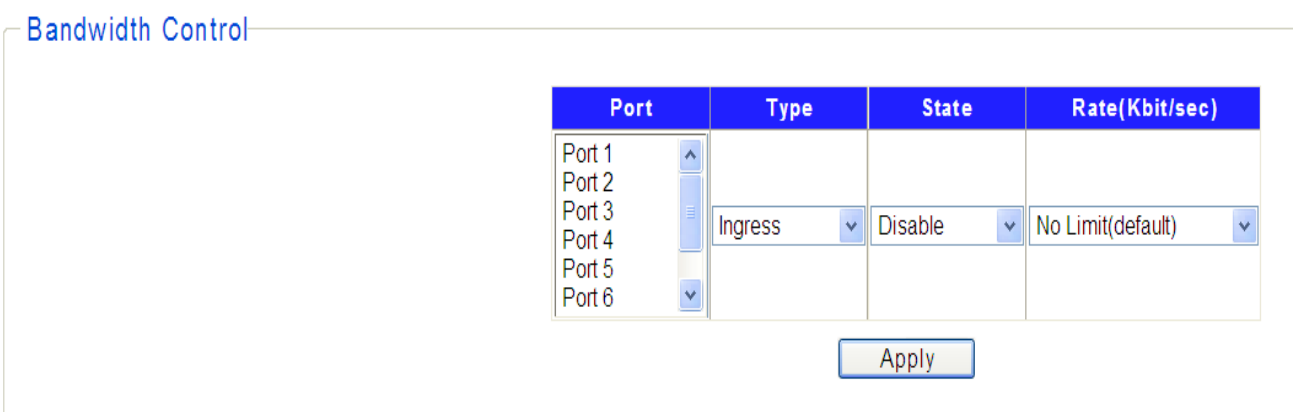
1. By default, the Priority Queue of all ports is 1.
2. Lowest Priority (background data)
3. Normal Priority (business-critical data, email, internet, etc)
4. Medium Priority (stream multimedia, etc)
5. Highest Priority (interactive voice, video, and delay sensitive data)

6.2 Bandwidth Control

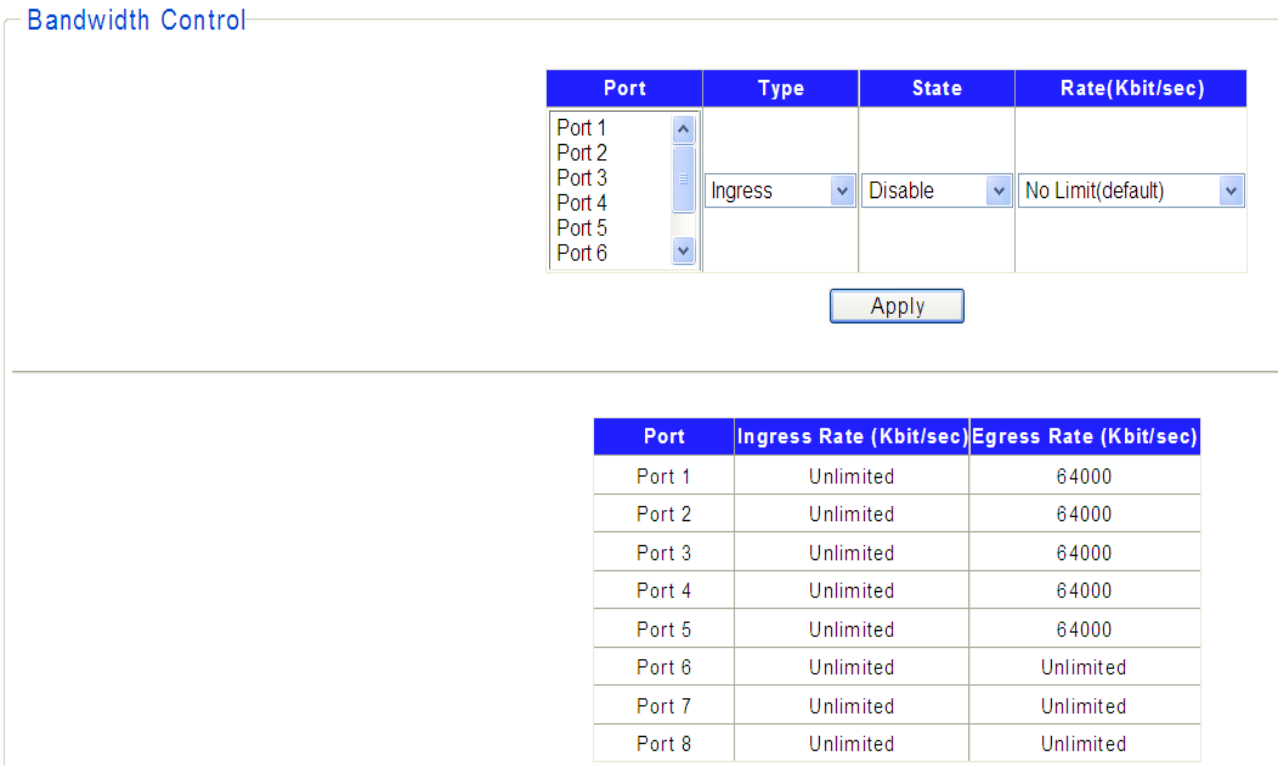
Click **QoS** > **Bandwidth Control**

Bandwidth control functions to control the ingress/egress traffic rate on each port via configuring the available bandwidth of each port. In this way, the network bandwidth can be reasonably distributed and utilized.

On this page you can configure and view the bandwidth control function information.



Hold **"Ctrl"** and the left button of the mouse to select the port, and select the type, state and rate of the selected port for bandwidth control, then click **Apply**.



The following table describes the labels in this screen.

LABEL	DESCRIPTION
Bandwidth Control Config	
Port	Select the desired port for rate configuration. It is multi-optional, you can choose eight ports at most at a time.
Type	Select **Ingress or Egress** from the drop-down box.
State	**Enable or Disable** bandwidth control for the selected port.
Rate	Select the Rate for receiving packets or sending packets on the select port. You can choose the rate as below: ■ No Limit(default), 1M bps, 64M bps, 256M bps, 512M bps, 1G bps
Apply	Click **Apply** to make the settings take effect immediately.
Bandwidth Control Table	
Port	Displays the port number of the switch
Ingress Rate	Displays the ingress rate of all ports.
Egress Rate	Displays the egress rate of all ports.

Note:

1. When egress bandwidth control feature is enabled for one or more ports, you are suggested to disable the flow control on each port to ensure the switch works normally.

Chapter 7 Security

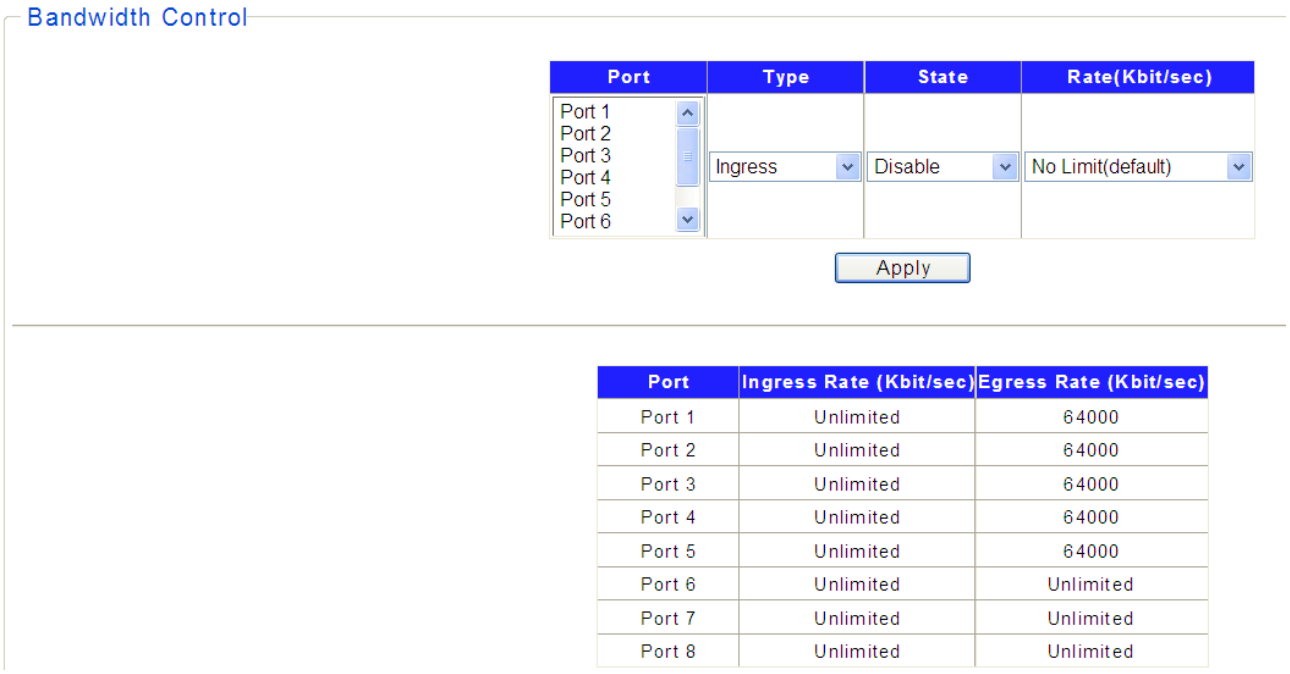
Use the Security pages to configure settings for the switch security features. It includes Storm Filter, Loop Prevention and DHCP Snooping.

7.1 Storm Filter

Click **Security** > **Storm Filter**

Storm Filter function allows the switch to filter broadcast, multicast, unknown unicast and unknown multicast frame in the network. If the transmission rate of the three kind packets exceeds the set bandwidth, the packets will be automatically discarded to avoid network broadcast storm.

1. Select the Storm Type from the drop-down list.
2. Hold **"Ctrl"** and the left button of the mouse to select the ports you need, select **Enable** from the State drop-down box to enable the setting, and then choose the rate from the checkbox.
3. Click **Apply**, then the Storm Filter information will be displayed as below.



The following table describes the labels in this screen.

LABEL	DESCRIPTION
Storm Filter Config	
Storm Type	Select the type of storm control ■ **Broadcast**: Broadcast packet ■ **Multicast**: Multicast packet ■ **Unknown Unicast**: Unknown unicast packet ■ **Unknown Multicast**: Unknown multicast packet

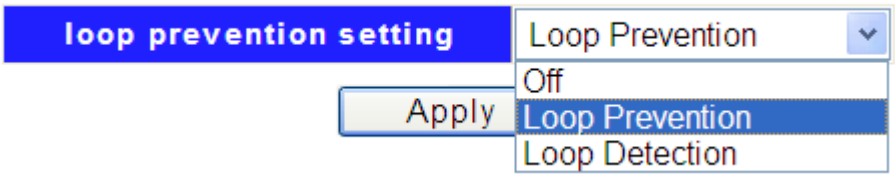
Port	Select the desired port for Storm Filter configuration. It is multi-optional, you can select 8 ports at a time at most.
State	Select the state of setting ■ **Disable:** Disable the storm filter function. ■ **Enable**: Enable the storm filter function.
Rate	Select the bandwidth for receiving the specified packet on the port. The packet traffic exceeding the bandwidth will be discarded. You can choose the rate as below: ■ No Limit, 1M bps, 64M bps, 256M bps, 512M bps, 1G bps
Apply	Click **Apply** to make the settings take effect immediately.
Storm Filter Table	
Storm Type	Displays the storm type of each port.
Port	Displays the port number of the switch.
Broadcast	Displays broadcast control states or rate for the port.
Multicast	Displays multicast control states or rate for the port.
Unknown Unicast	Displays unknown unicast control states or rate for the port.
Unknown Multicast	Displays unknown multicast control states or rate for the port.

7.2 Loop Prevention

Click **Security**> **Loop Prevention**

The switch can detect loops using loop detection packets. Supports Loop Prevention and Loop Detection functions, The Loop detection will detect the cable loopback and provide the loop LED to display. The Loop prevention will detect the cable loopback and block the corresponding port automatically.

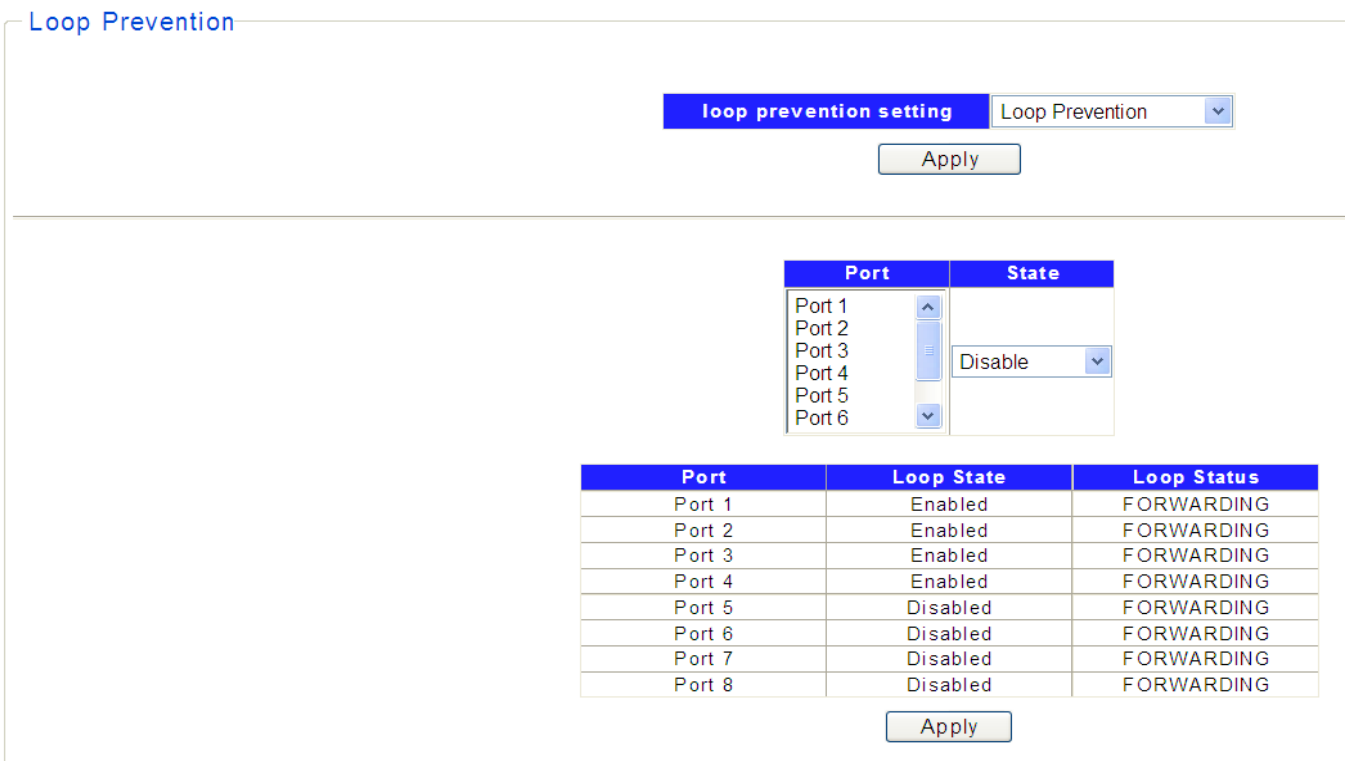
1. There are three modes for you to choose: Off, Loop Prevention, Loop Detection.



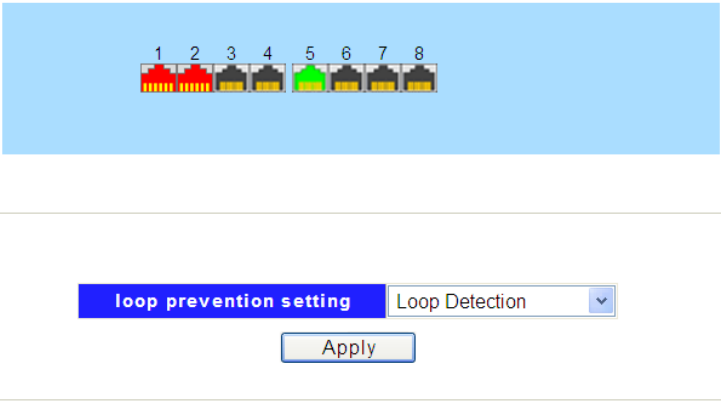
2. Select Loop Prevention from the drop-down box to enable the function and then click **Apply**.

3. Hold **"Ctrl"** and the left button of the mouse to select the ports you need, and then select **Enable** to enable the Loop Prevention for the selected port.

4. Click **Apply**, you can view a screen about Loop State of all ports as below.



5. The Loop Detection function will operate automatically to detect looping ports, the link state will be showed as below when some ports on net work loop status if you have set this function.



The following table describes the labels in this screen.

LABEL	DESCRIPTION
Loop Prevention Setting	
Loop Function	Select the state of Loop Function setting ■ **Off:** Disable the Loop Detection/Prevention Function. ■ **Loop Prevention**: Enable the Loop Prevention Function. ■ **Loop Detection:** Enable the Loop Detection Function.
Loop Prevention Config	
Port	Select the desire port for Loop Prevention setting.

State	Disable or Enable the loop prevention function of the selected port.
Loop Prevention Table	
Port	Displays the port number of the switch.
Loop State	Displays the loop state of all ports.
Loop Status	Displays the loop status of all ports. The default factory of all ports is **FORWARDING** for the switch.
Apply	Click **Apply** to make the settings take effect immediately.

Note:

Enable Loop prevention function for default setting.

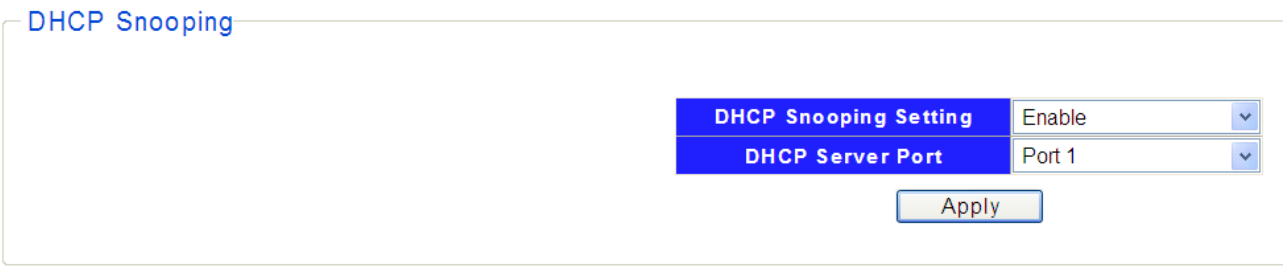
7.3 DHCP Snooping

Click **Security**>**DHCP Snooping**

DHCP snooping is a security feature that acts like a firewall between untrusted hosts and trusted DHCP servers. The DHCP servers are allocating IP addresses to the clients on the LAN, DHCP snooping can be configured on LAN switches to harden the security on the LAN to allow only clients with specific IP/MAC addresses to have access to the network. Set the DHCP server port for trusted port to connect the DHCP server.

1. Select **Enable** to enable DHCP Snooping.

2. Click **Apply**, and then you will see the configuration screen as shown below.



3. Select a DHCP sever port from the drop-down box.
4. Click **Apply** to make the setting take effect.

The following table describes the labels in this screen.

LABEL	DESCRIPTION
DHCP Snooping Setting	**Enable** or **Disable** the DHCP Snooping Setting.
DHCP Server Port	Select the port to specify which port should connect to DHCP server.
Apply	Click **Apply** to make the settings take effect immediately.

Product Specifications

Standard	IEEE802.3, IEEE802.3u, and IEEE802.3ab IEEE 802.3x flow control IEEE 802.1p class of service, priority protocols IEEE 802.3az Energy Efficient Ethernet(EEE)
Interface	8* 10/100/1000Mbps ports RJ-45 NWay ports 1* Reset button
Transmission Mode	10/100Mbps: Full-duplex, Half-duplex 1000Mbps: Full-duplex
Memory	Flash: 16M-BIT
MAC Address Table	8K
Jumbo Frame	9K Bytes
Buffer Memory	256 Bytes
Temperature	Operating: 0°C ~ 40°C (32°F ~104°F)
Humidity	Operating: 10% ~ 90% RH, non-condensing
LED Indications	1*Power LED(Green) 8*Gigabit port LEDs(Link/Act: Green) 1*Loop LED(Red)
Power Supply	External Power Adaptor 5V/1A
Dimensions	155*85*26 mm
Case Material	Metal
Certification	EMC/FCC, CE Class B; Safety/LVD EN60950-1